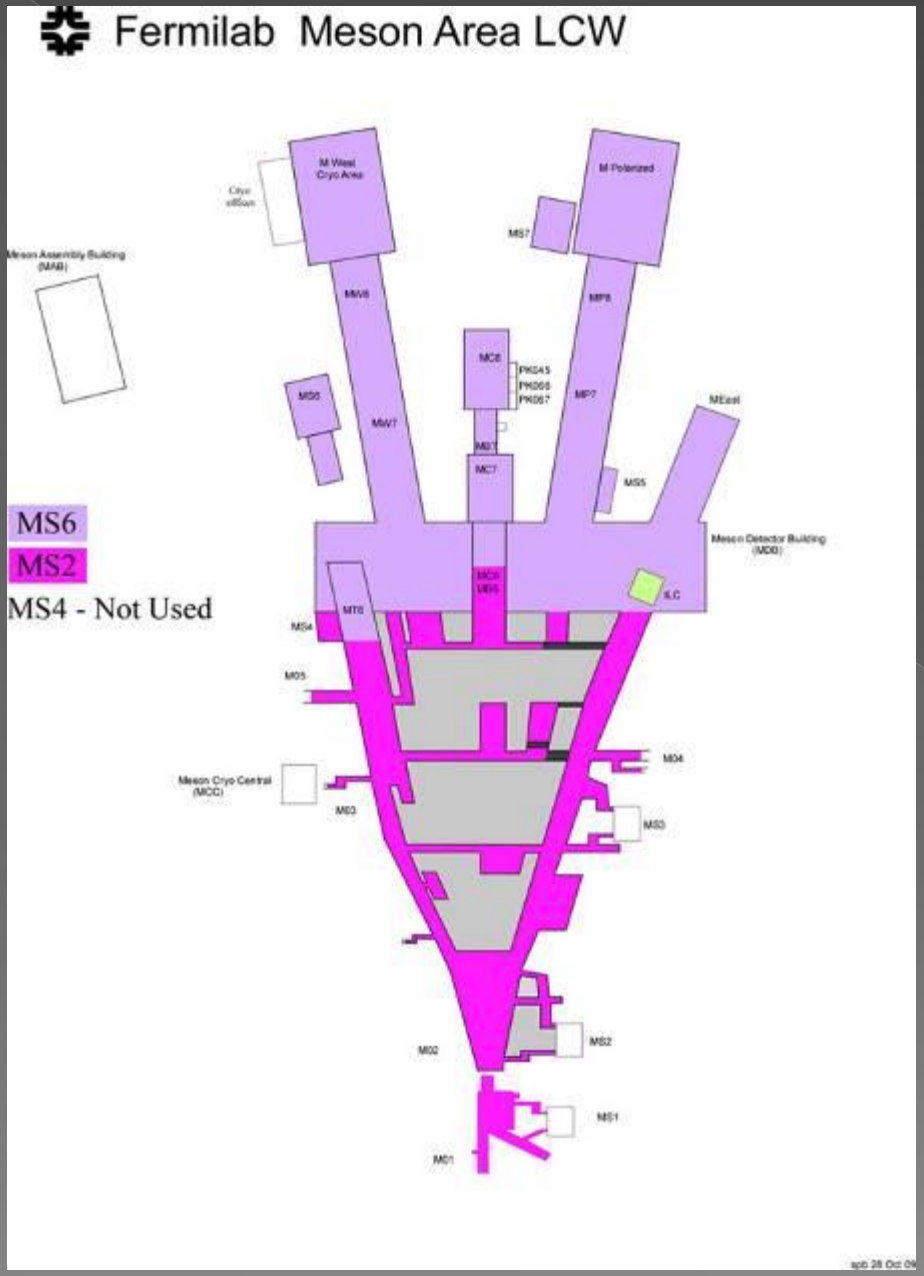
Turning on the MS6 LCW System, and filling the expansion tank when needed.

spb 24 Dec 2012
Version 1.1



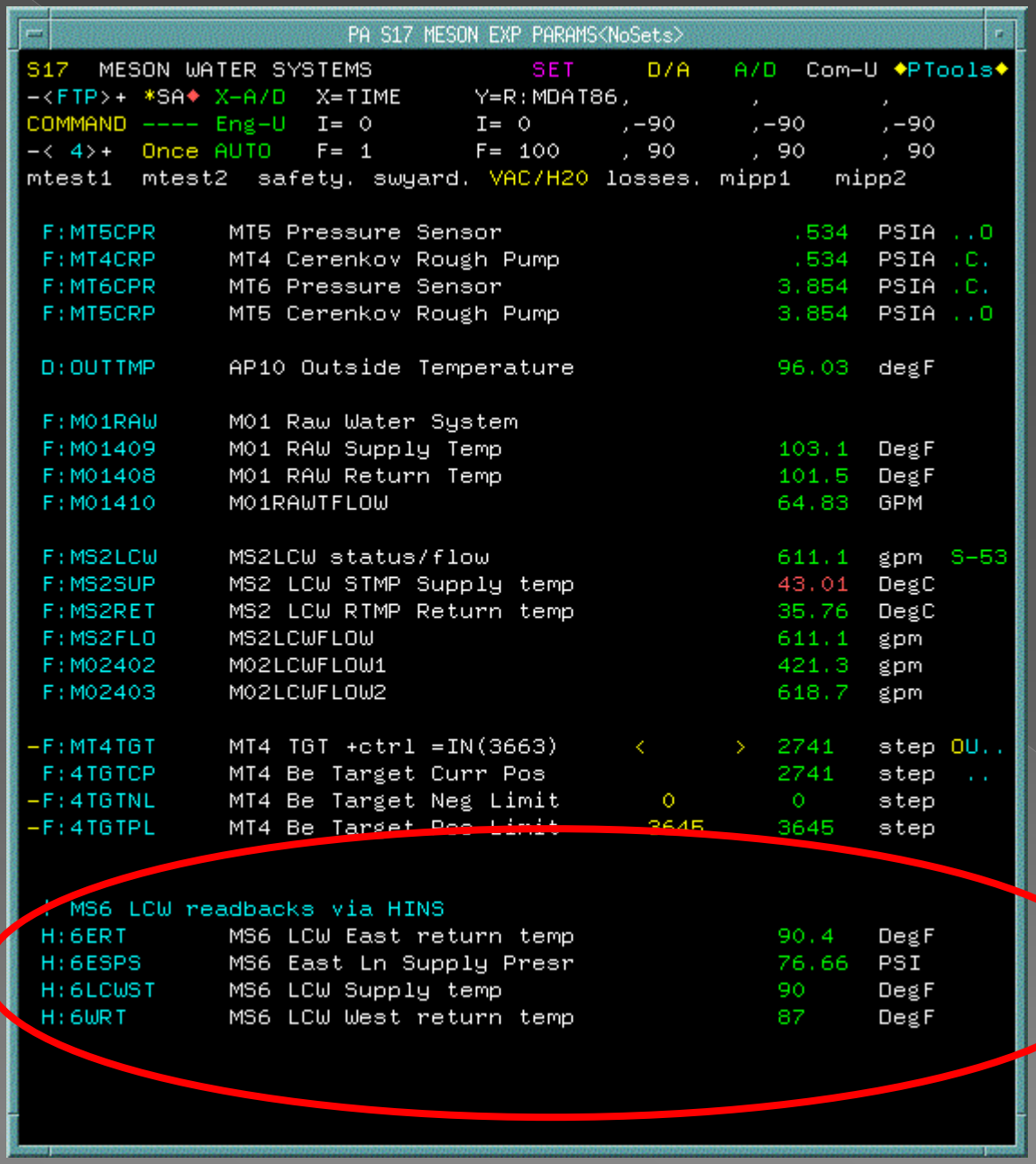
This map shows what areas, Service Buildings and enclosures, the 2 LCW systems cover.

The MS6 LCW System

The MS6 LCW system supplies cooling water for the power supplies at MS5 & MS6. In addition it supplies cooling water for the HINS experiment on the East side of the Meson Detector Building.

The LCW system consists of 3 pumps, normally we use 1, and they are located in the LCW room at MS6, in the south worm.

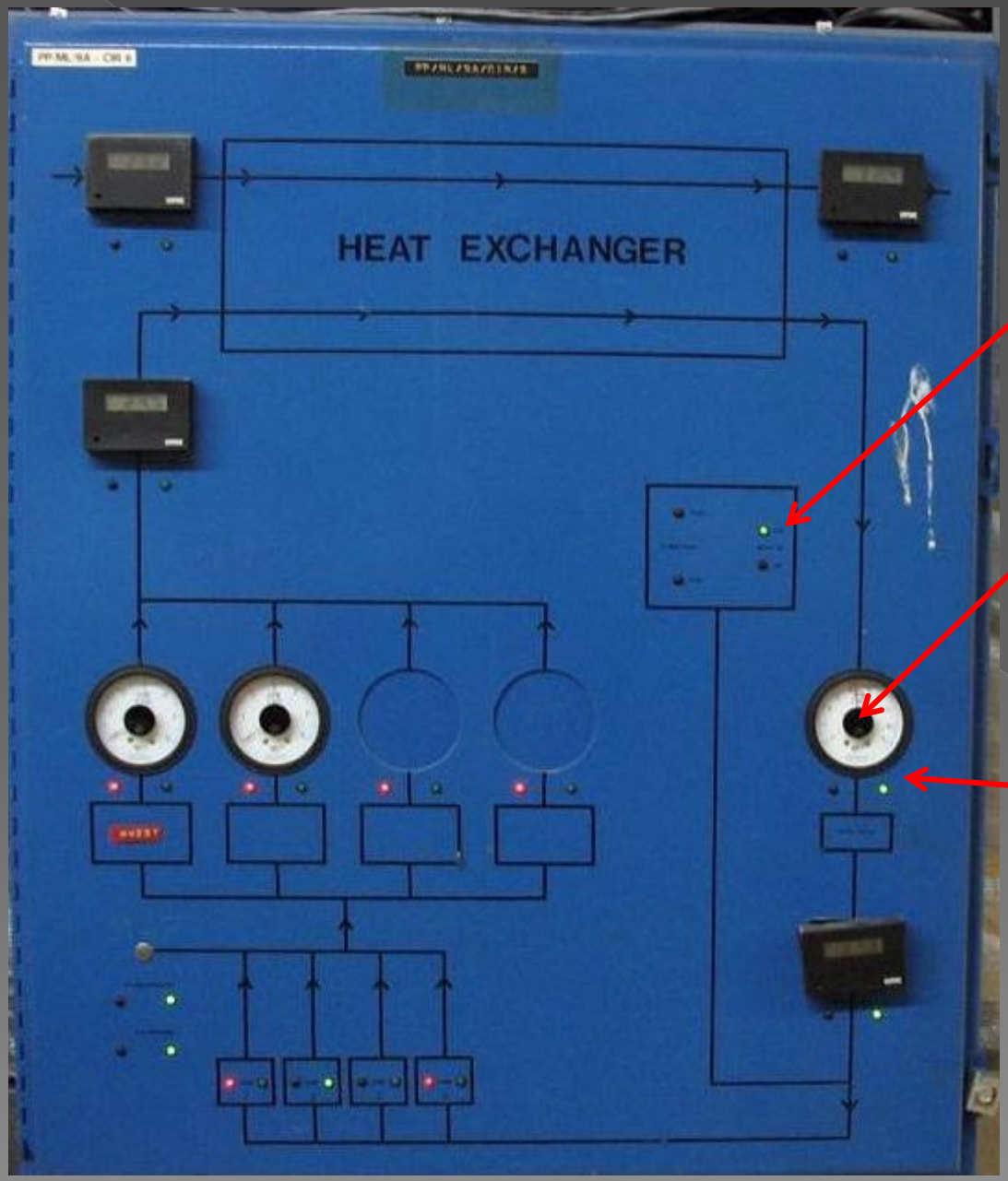
There is no ACNET parameter for the MS6LCW system, yet.



Currently, we do not have any Acnet or FIRUS alarms for the MS6LCW system. However since HINS uses this system for cooling, there are some HINS parameters we can use to determine if the system is running, but nothing to tell us if it is in alarm for make-up.

The next few slides will show you how to fill the expansion tank.

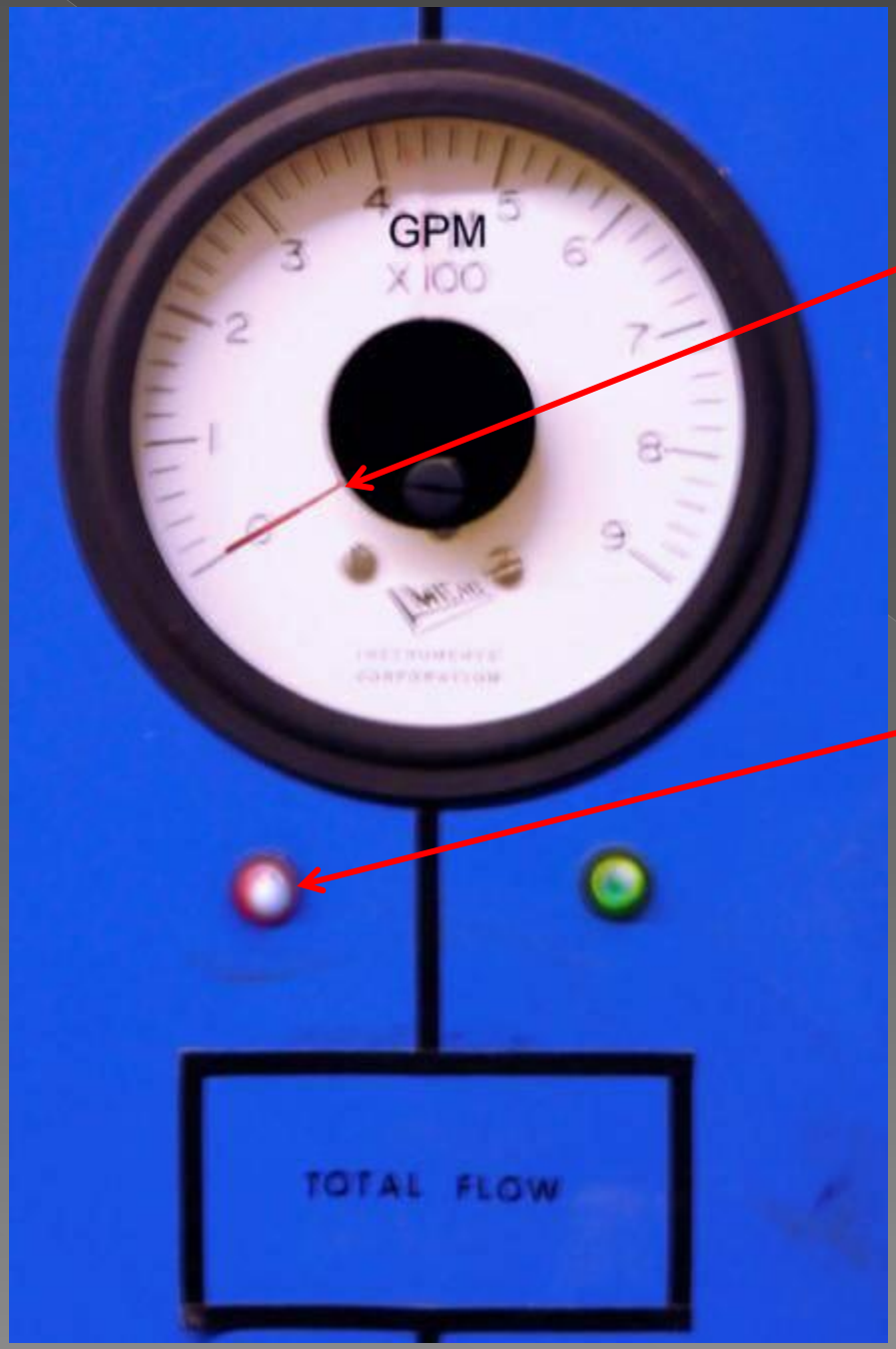
The Blue Box controller



Make-up indicator

Flow meter shows the rate the water is flowing through the pipes.

The System LEDs show that the system is on.



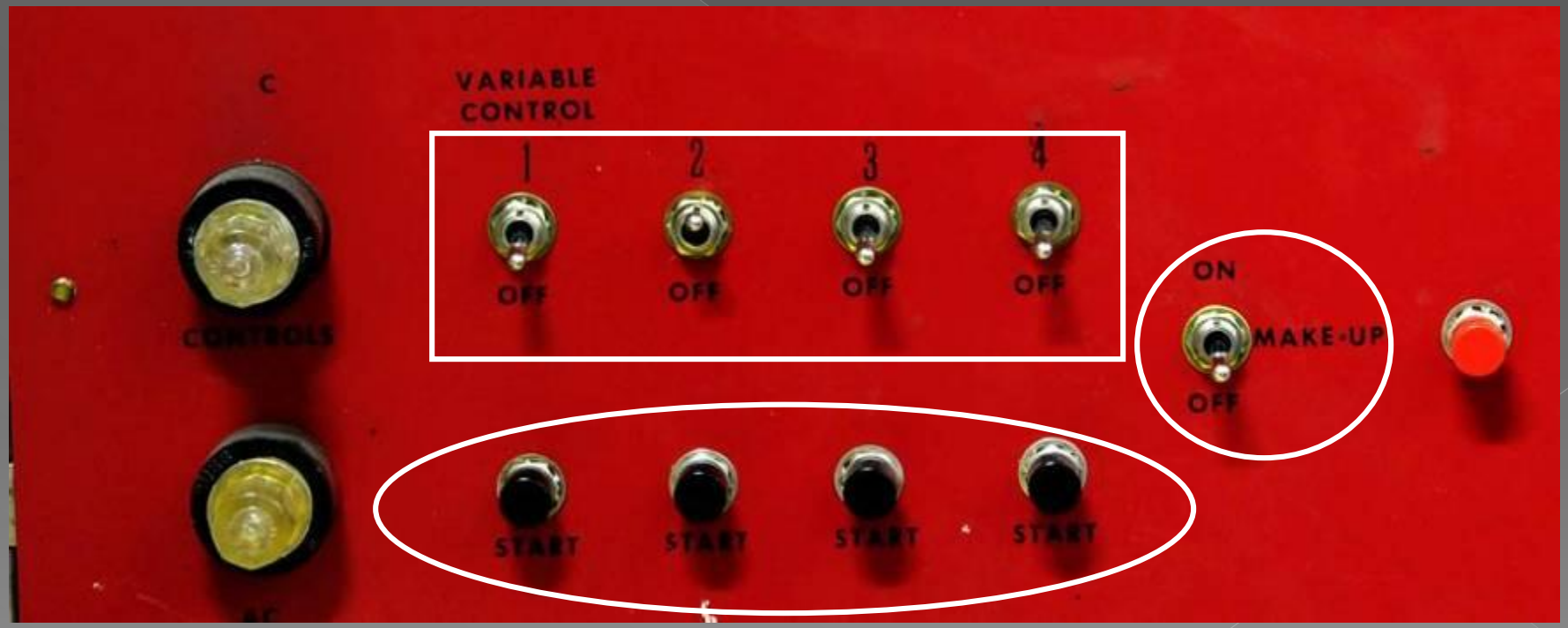
Here we see the flow meter at 0

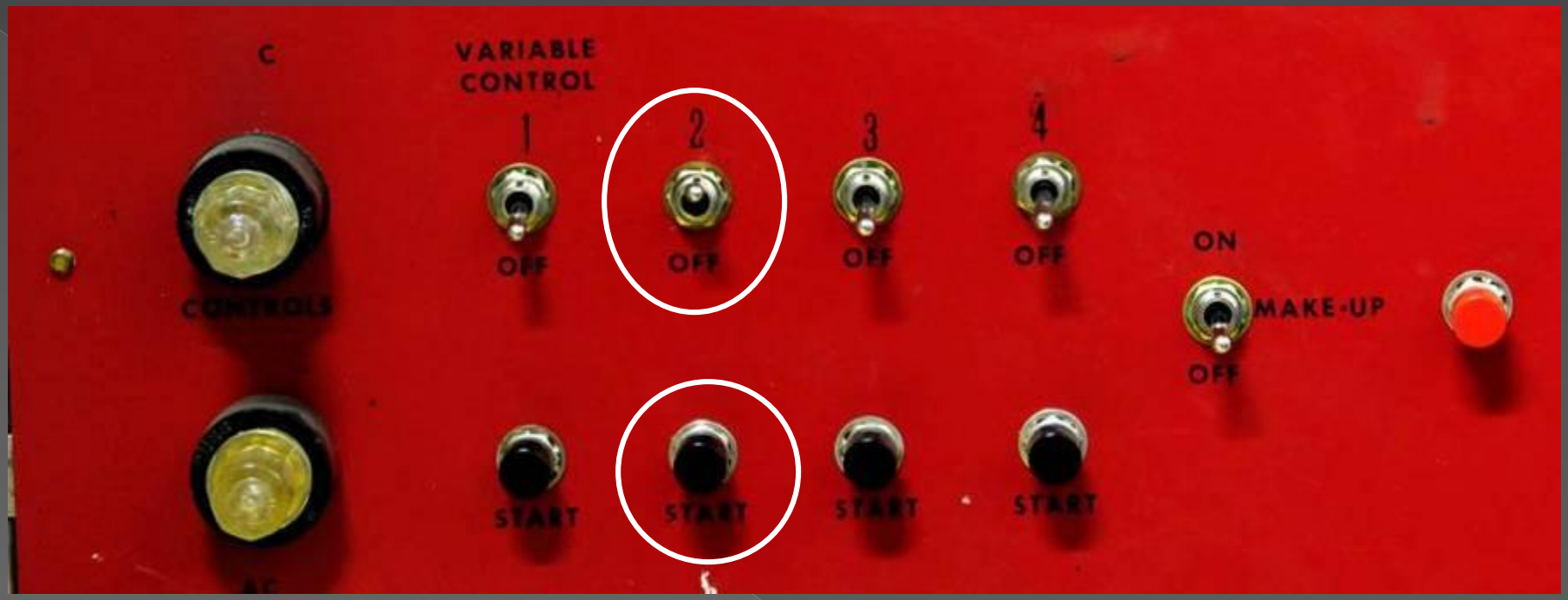
and the red LED is lit, no flow.

Let’s open the blue door and see what’s inside.

Inside MS6's Blue Box

We are mostly concerned with the red panel. The panel has 4 toggle switches for the 3 pumps and below each toggle is a black button used to turn on the pump. In addition to the right is a switch to turn on the makeup for the expansion tank.





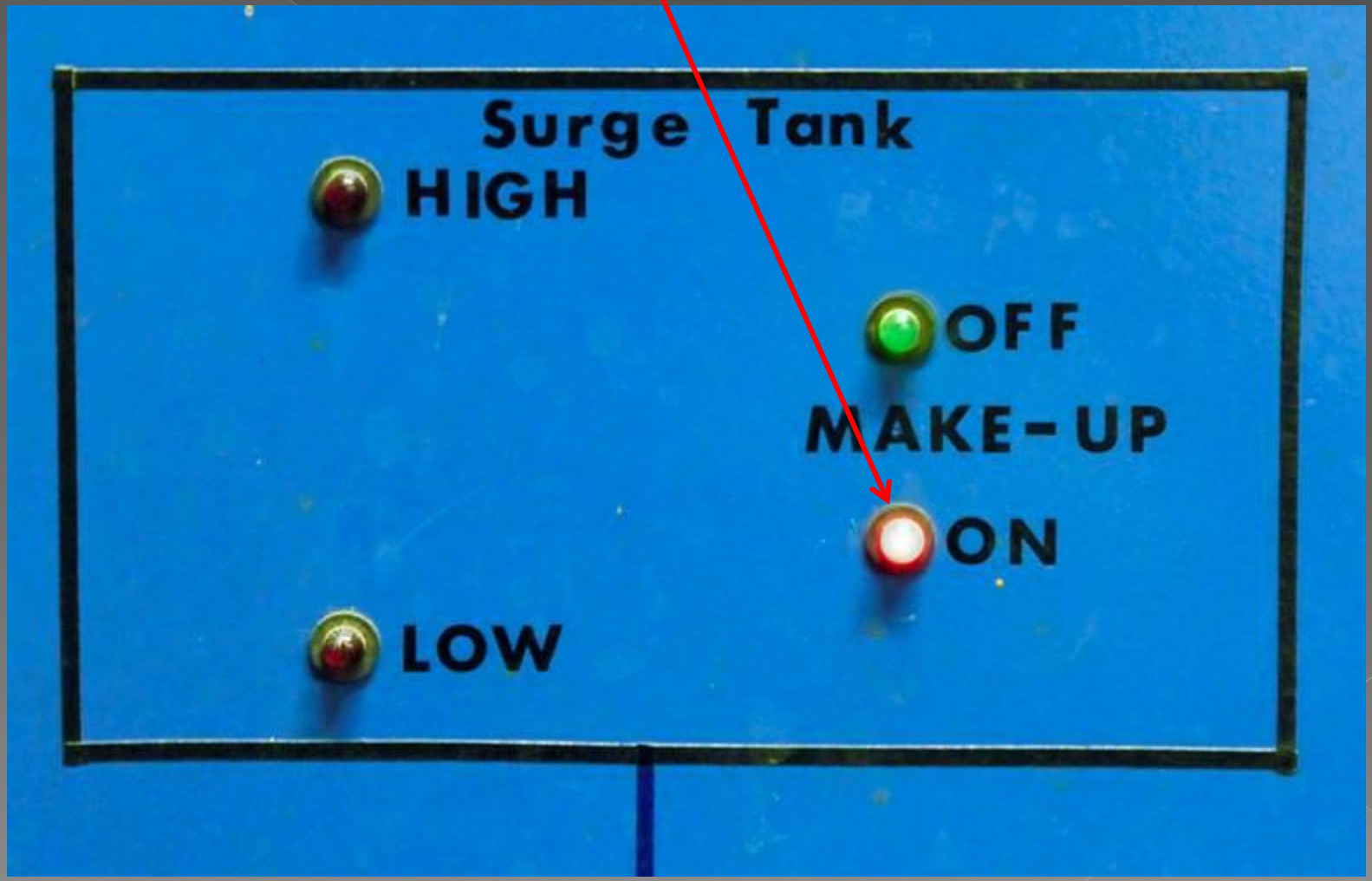
Here we see that we are only using pump number 2, see the toggle switch is flipped to ON. To turn the MS6 LCW System on, press the start button for pump Number 2 and watch the Flow gauge on the front panel.

Note: The Water Werks group may change which pump they are using, so DO NOT change the pump switches. Questions contact the Water Group.

When the system is up and running, the flow meter will show flow, GPM, above the red line and the green LED will be lit.

We may need to fill the expansion tank when it gets low

If the expansion tank needs filling we most likely have gotten a ACNET or FIRUS alarm. At the chassis, or blue box, the Make-up LED will be ON.



Note: The next few slides will instruct you on how to add water to the MS6LCW System. Currently the MS6LCW System is running with glycol, therefore we are NOT allowed to add water to the system, only the Fluids department techs are allowed to add glycol.

What does it mean to fill the expansion (Surge) Tank?

Every system has an expansion tank to hold water when the volume fluctuates, cold contracts and hot expands, the water has somewhere to go. It also acts as a buffer for leaks. Because of the leaks, small and large, we will occasionally need to add water to the expansion tank. The expansion tank is a large oval (normally) blue tank that is in the LCW room and usually near the ceiling. On one side of the tank there will be a glass tube, about 1/2 inch in diameter and about 36 inches long, with a ruler attached to it to help determine the level of the tank and how much water needs to be added. The Water Works Group attached 3 tie wraps on the glass tube, a low level, a high level, and a mid point. The mid point tie wrap should line up with the Surge Tank Alarm. So when the level falls below the middle tie wrap an alarm will happen on Acnet, saying we need to add water to the expansion tank. We normally fill it up about 6-8 inches, the level will be above the mid point mark.

The next few slide will explain filling the expansion tank for the MS6 LCW system using pictures.

The expansion tank is on the ceiling near the east wall, and not blue.

A closer picture of the expansion tank. See the sight glass for filling the tank on the left side of the tank.

Here are the 2 tie wraps. They are using a red mark for the level instead of a tie wrap.

Here we see the level below the mid level tie wrap.

Which means you will need to add water to the expansion tank.

Next, we will need to open 2 valves, flip a switch in the Blue box and watch the expansion tank gauge.

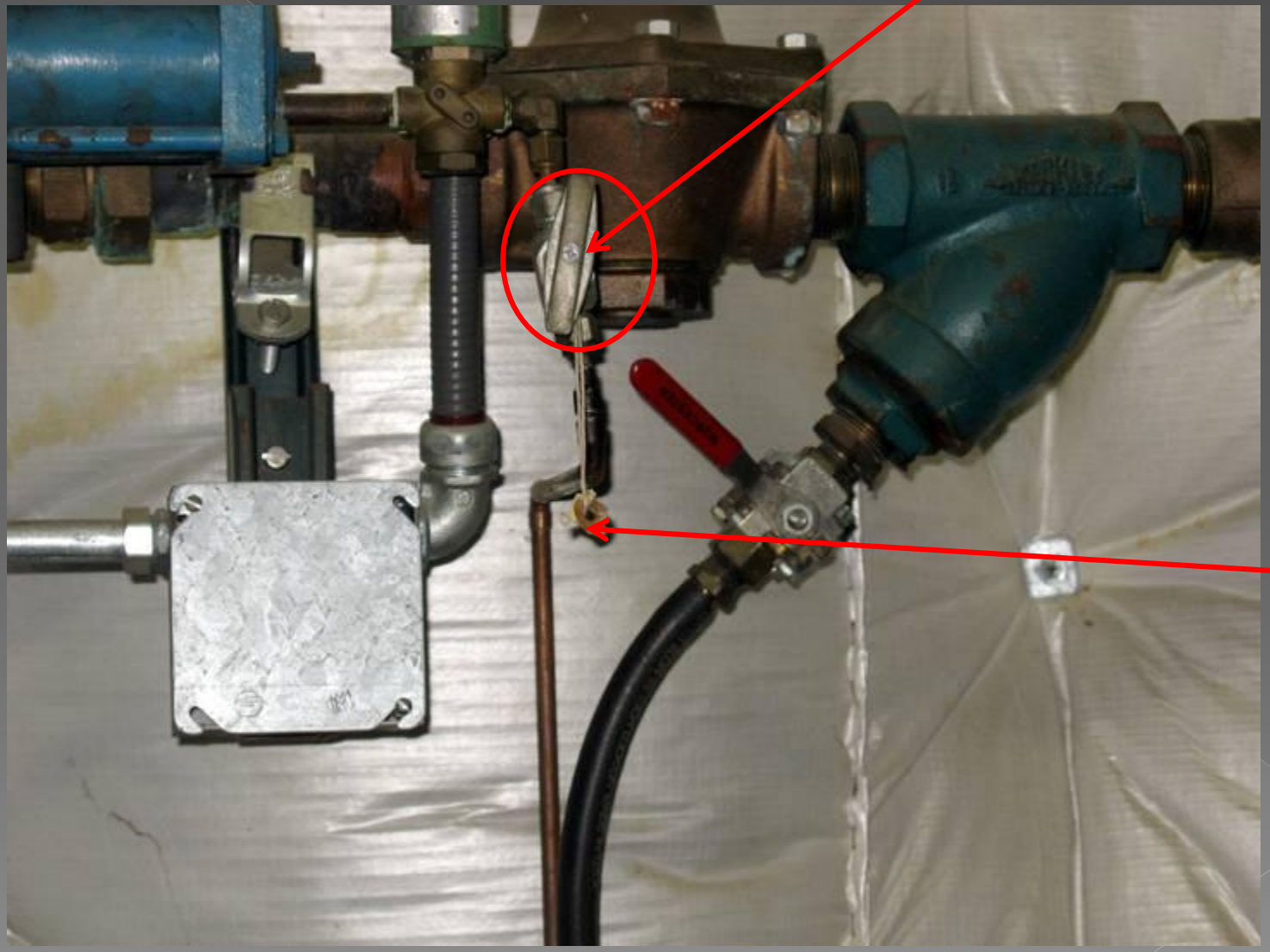
Okay, now let's see if we can find those valves.

But before you go off and try to find them, I'll give you a hint. One is on the east wall to the right of the DI bottles and the other is on the west wall, behind you by the exit door.

The needle valve is against the East wall, between the DI Bottles and the air compressor, see next slide for a better view.

The small needle valve is the wall, see the (invisible) tag?

Rotate the knob all the way open.



The invisible Tag.

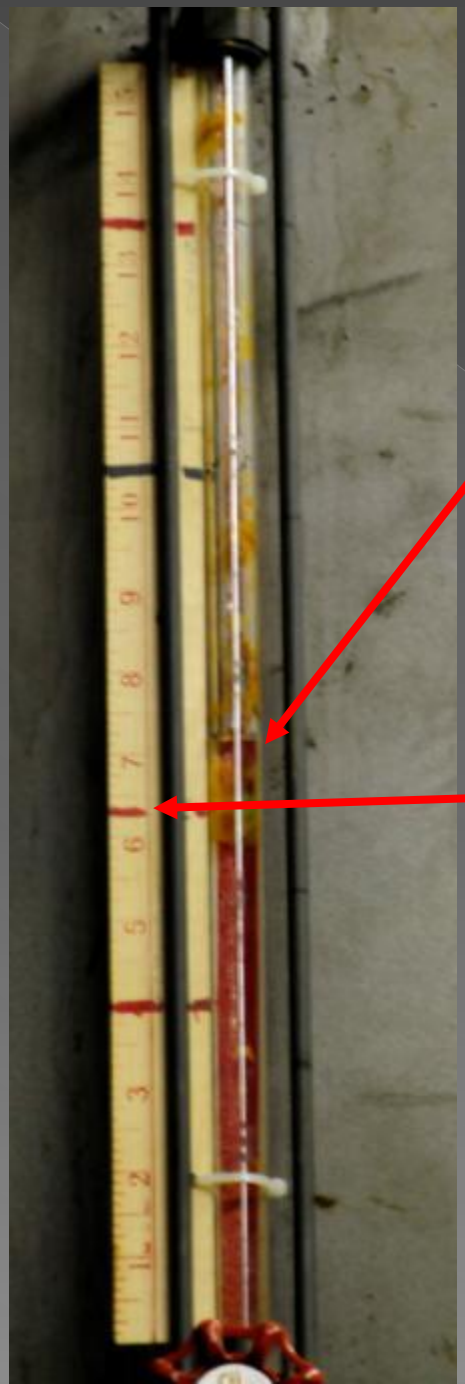
The second valve is left of the exit door, see next slide.

See the ball valve, turn the handle and open it.

Back to the expansion tank, after the valves are open, open the door and to the right of the pump switches you will see the Make-up switch, flip it on.

While you are filling the expansion tank, keep an eye on the sight glass checking the level. Once the slight glass shows the proper level stop.

Turn the switch off and close both valves.



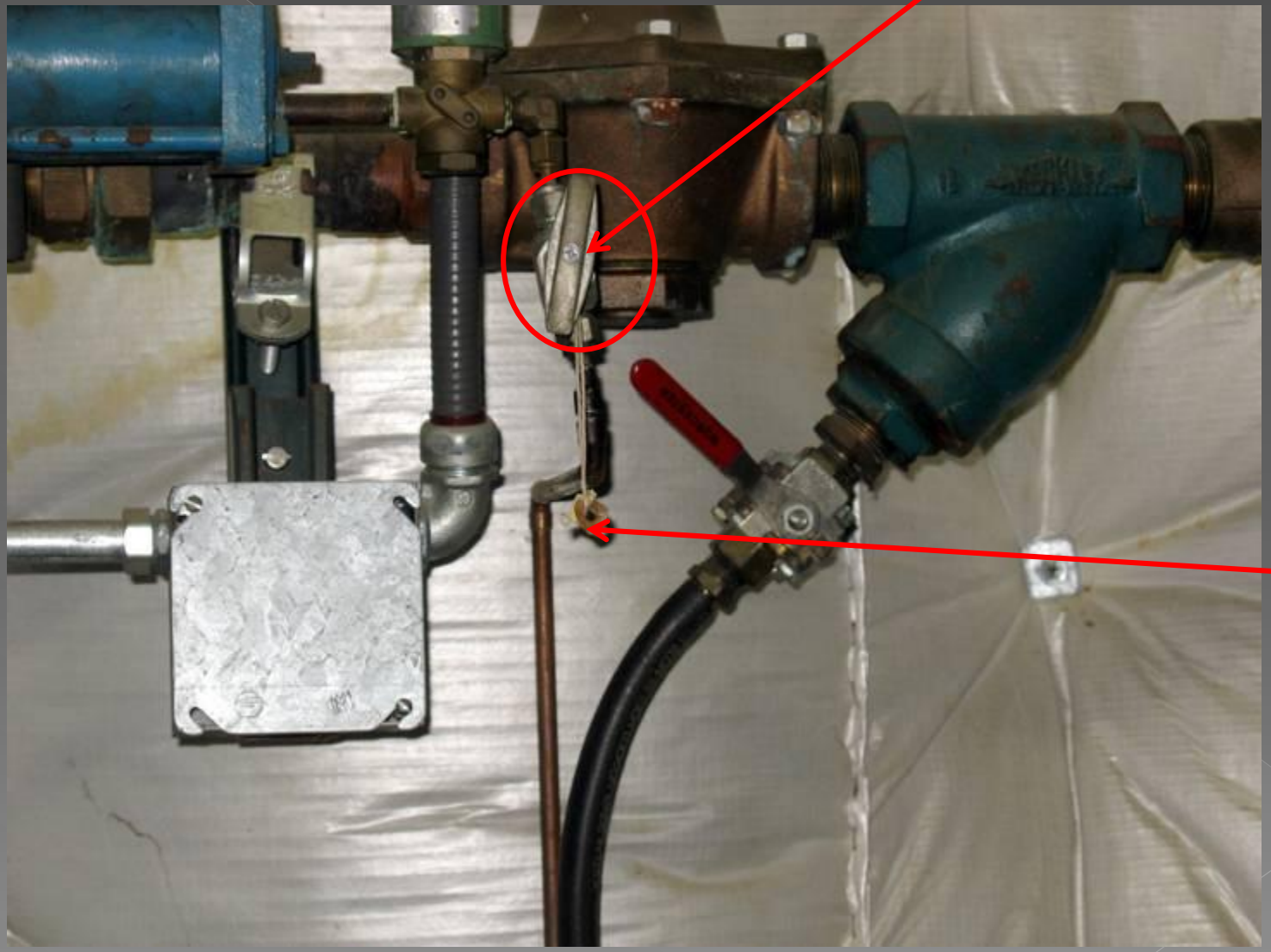
Here we see the level is above the mid level. When filling watch the Make-up panel for the Off LED to turn green.

Mid point red mark.

The Make-up should be OFF.

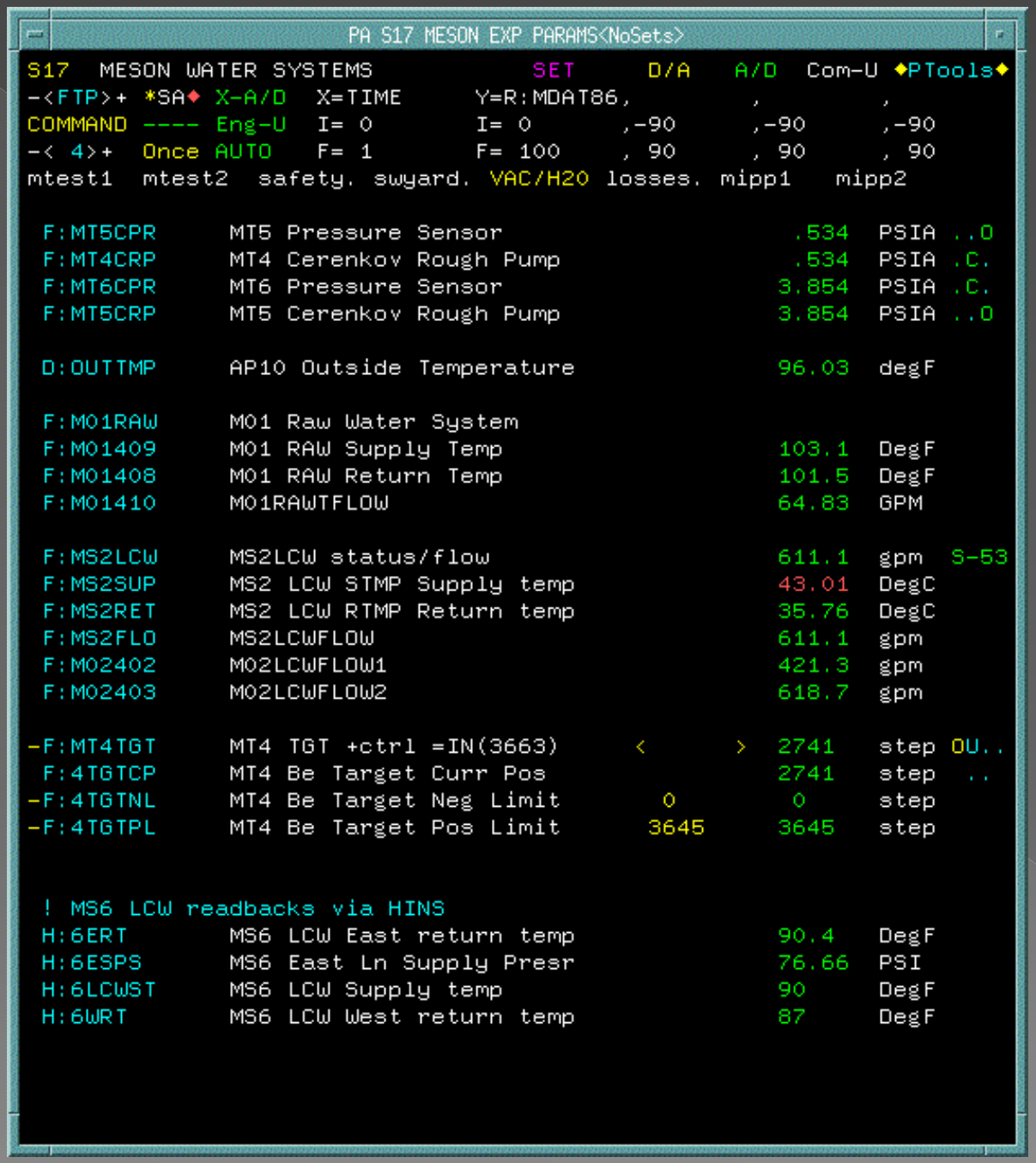
Flip the Make-up switch to Off.

Close the valve.



The invisible Tag.

And this one, now you are finished.



The parameters read back okay

da End, stay cool ……